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MCZ newsletter

MUSEUM OF COMPARATIVE ZOOLOGY

PROFESSOR BRYAN PATTERSON RETIRES



Mendoza, Argentina, 1958. (l. to r.) Bryan Patterson, Alfred S. Romer, and Arnold D. Lewis.

Retirements at the MCZ are occasions for looking back and recalling the highlights of a professor's career — so far! They seldom signify any real change in the professor's work habits. For Professor Bryan Patterson, who has been at the MCZ for twenty years, June 30, 1975 will be the date he officially becomes Professor of Vertebrate Paleontology, *emeritus* but he plans to continue his current work unabated.

Before coming to the MCZ, Pat served for nearly thirty years at the Field Museum of Natural History, Chicago, working mainly on South American and early Tertiary North American fossil mammals. This pleasant existence was interrupted by World War II, during which he served with the 120th Regiment, 1st. Infantry Division. Landing on Omaha Beach ("fortunately," he says "a day or two after most of the un-

pleasantness there was over"), he went on to Germany, was lightly wounded, captured, escaped twice and was recaptured twice. "After all that it was rather a relief to return to normal occupation like the study of taeniodonts and field work on the Mexican border." Pat is firm in the belief that enlarging the fossil record is one of the nobler occupations of mankind, and has endeavored to do his share. His field expeditions have taken him over much of the west, to Central America, Hispaniola, Argentina, East Africa, Venezuela, Brazil and Peru.

During Pat's eventful career, he has left an indelible impression on many people. It seemed fitting at this time to ask some of his colleagues and students for their reflections on Pat and his work. The following are excerpts from some of their responses.



Getting close to Paleocene mammals. Western Colorado, 1939.

Dr. Paul O. McGrew, now at the University of Wyoming, recalls: "In the late 1920's a lanky, 17-year-old British youth walked into the director's office of Field Museum of Natural History in Chicago and announced that he was ready to go to work. He had just graduated from the English equivalent of our high school and was ready to set out on his own. It seems that the director of the Field Museum at that time, Mr. Davies, was a friend of the youth's father, Col. J. H. Patterson of the British Army, who had provided some man-eating lions for exhibition at the museum. Some time previously Mr. Davies had inadvertently agreed to put the son, Bryan, to work at the museum if he would come to America. True to his word, Director Davies placed Pat to work in the Department of Geology where he soon found himself preparing the skeleton of a curious beast that proved to be the best known specimen of *Homalodotherium*. He marveled at the ability of experienced people to look at a specimen and to know so many things about it. For example, one day Pat was laboring over a specimen when, nearby, the Curator, O. C. Farrington, and the Chief Preparator, J. B. Abbott, were discussing the skull of a fossil marsupial carnivore that Associate Curator E. S. Riggs had collected in South America. When the name of the beast, a *Borhyaena*, was mentioned, Pat thought, as he later confessed, 'My God I'll never be as smart as these people — not only do they know what kind of an animal it is just by looking at it, but they even know its sex!'

The library came to hold as much or more fascination for him than getting stubborn matrix off a fossil skull. He found himself spending more and more time over the literature on fossil vertebrates and studying specimens instead of preparing them. He had a keen mind, and learned fast, and was soon launched on his career."

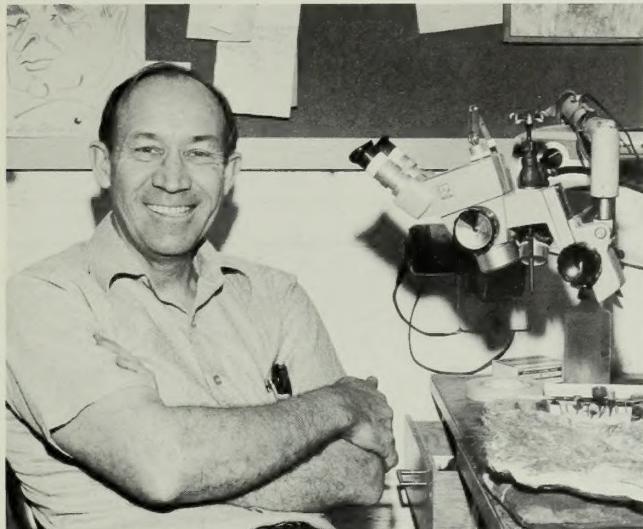
Former student Dr. Roger C. Wood, now at Stockton State College, adds: "Pat's paleontological contributions are many, varied, and well known within the profession. His work on the Cretaceous mammals of Texas is of fundamental importance. He

has also made significant contributions to our understanding of Tertiary mammalian evolution in North America. Until Pat's expeditions to northwestern Kenya started collecting truckloads of bones in the mid-1960's, the Pliocene history of Africa was essentially unknown. Happily, this is no longer true. The MCZ expeditions that Pat led were the vanguard for many more to the regions surrounding Lake Rudolf which have resulted in further important and often well publicized discoveries bearing on the evolution of the African fauna in general and the evolution of man in particular. I remember when we found our first early man remain during the summer of 1965. It was a rather unprepossessing fragment of a humerus that Pat picked up while prospecting one hot afternoon — there wasn't any other kind —; the full significance of the discovery didn't really hit him until that evening back in camp. . . . Some of Pat's earliest work was on the fossil vertebrate fauna of South America, and throughout his career he has continued to produce seminal works on the evolution of South American vertebrates. He is unquestionably one of the world's preeminent authorities on this subject." In recognition of Pat's work in the area, and to house the many fossils he helped to unearth there, a new paleontological museum in Estanzuela, Guatemala, has been named after him.

It is in the field that Pat has had many of his finest hours. Former student, Dr. Anna K. Behrensmeyer, now at Berkeley, remarks: "I will always regret not having experienced field work with Pat, as it was in the field that he was reputed to be at his best." Another student, Dr. Keith S. Thomson, now at Yale, was more fortunate and here are some of his comments: ". . . he has been an indefatigable field paleontologist and the results of expeditions under his leadership have been to provide the grist, from fishes to primates, for many a paleontological mill. His vast enthusiasm for the whole of natural science has always meant that Pat explored every part of the field subject — as a member of Pat's first Kenyan expedition (1963) I remember spending a lot of time collecting basalt samples and sacks of freshwater clams. Field work with Pat is field science — very thorough and enjoyable. . . . Two last things, I never met a man who was so completely lethal when left unsupervised in charge of machinery. In Africa it once took us nearly an hour to get his foot out of a tire pump. And, of course, if Pat were not to have enlivened the scene at the MCZ, there would have been no Bea, either."

Another mishap to a lower extremity led to Pat's most notorious creation. According to Roger Wood, "During the summer of 1966, out in the Kenya desert, Pat stubbed a toe which shortly thereafter gave birth to the famous 'dancing worm' of Turkana. (How Pat got his stubbed toe is another story.) Pat has the only procreative big toe that I've ever heard of. Subsequent to its stubbing, an infection set into Pat's toe and he was laid up in camp for a couple of weeks, barely able to hobble around. During that time the mail arrived, which included a letter from Tilly Edinger to Pat with a clipping about the discovery by one of his former

ARNOLD D. LEWIS TAKES SMITHSONIAN POST



Arnold D. Lewis. The caricature behind him is of his close friend, Jim Jensen, now at Brigham Young University, Utah.

After twenty-three years at the MCZ, Chief Preparator Arnold D. Lewis of the Department of Vertebrate Paleontology is leaving to join the staff of the U.S. National Museum in Washington. There he will assume responsibility for the extensive fossil vertebrate laboratories, and will supervise both preparation and exhibit activities.

Arnie has spent an average of three months out of every year in the field since he arrived here from the Field Museum of Natural History in Chicago. He has collected fossil vertebrates in many parts of the United States as well as in Argentina, Egypt, Africa, and Venezuela, and has contributed significantly to the

colleagues at the Field Museum of Natural History in Chicago of a worm-like fossil that was totally unlike anything previously known to science. Pat used Tilly's clipping as a springboard for one of the most successful scientific hoaxes that I know of. He invented several fictional characters — a retired British colonel living in Kenya, an avaricious Indian trader, an African school teacher, and his grade-school pupil — and wrote letters on their behalf to the Field Museum. These he had different members of the field party copy in their various handwritings, and eventually they were posted from addresses scattered across Kenya, some by surface and others by airmail. The gist of all their letters was that a creature very like the fossil, known in the local dialect as the dancing worm, was alive and well in the remote swamps of Turkana. Over a period of many months these letters one by one reached their destination and had the cumulative effect (reinforced by expert opinions — including that of Pat, who happened to be passing through Chicago — as to the authenticity of the letters) of leading to serious consideration of an expedition to collect 'dancing worms'. These plans were

field and laboratory research of Professors A. S. Romer and B. Patterson.

Among his most recent contributions have been his participation in Romer's Chañares project which yielded one of the best known faunas of Triassic age from South America. He was also a member of Patterson's East African expeditions, and in 1967 he discovered a mandibular fragment of *Australopithecus*, a probable ancestor of modern man. "I just looked down and saw it lying by my foot," he says. Although Professor Patterson and the rest of the party scoured the area thoroughly, this specimen was the only hominid found that year.

Arnie's expert fossil preparation is well known to vertebrate paleontologists. In 1956 he received wide public acclaim for his mounting of *Kronosaurus*, the giant plesiosaur, earlier collected by William E. Schevill in Australia. Under Arnie's leadership, many major projects have been completed including, recently, the reconstruction and mounting of an eight foot turtle carapace from the Pliocene of South America, the largest ever found. His mounts also are exhibited in other natural history museums, such as those at Cleveland, Princeton and Pittsburgh.

Arnie started working with fossils in high school. "The Carnegie Museum started a fossil quarry on the ranch where I lived in Utah" he explains. "I started working for them summers while I was in high school and after the war I went directly to the Carnegie Museum and got training there as a technician."

At a farewell party on April 30, Professor Farish A. Jenkins, Jr. and Carol Campbell, Exhibits Director/Designer, presented Arnie with tokens of the staff's affection and gratitude for his many productive years at the MCZ. He will be missed.

eventually quietly laid aside, however, when a Christmas card from Kenya reached the Field Museum. On its cover was a photograph of a dour-looking individual (Pat), safari hat pulled over his eyes so that he couldn't be clearly identified, standing ankle deep in a swamp with a shotgun slung over one arm, distastefully viewing what was clearly a recently killed dancing worm (a papier-mâché model made by Vince Maglio). Inside the card were Christmas greetings followed by the signatures of the various fictional letter writers."

As Kay Behrensmeier puts it: ". . . Pat has quite his own style and people generally have to learn to interact with him on his own terms — delightful terms, at that. He was very much a part of the best Harvard parties that I can remember. When everyone had had a few, or more, he often became one of the most enthusiastic dancers. Parties were easy to enjoy with Pat and Bea as part of the company, as no doubt they still are!"

Undoubtedly, Pat will continue to be an integral part of the MCZ scientific and social scene for a long time to come.



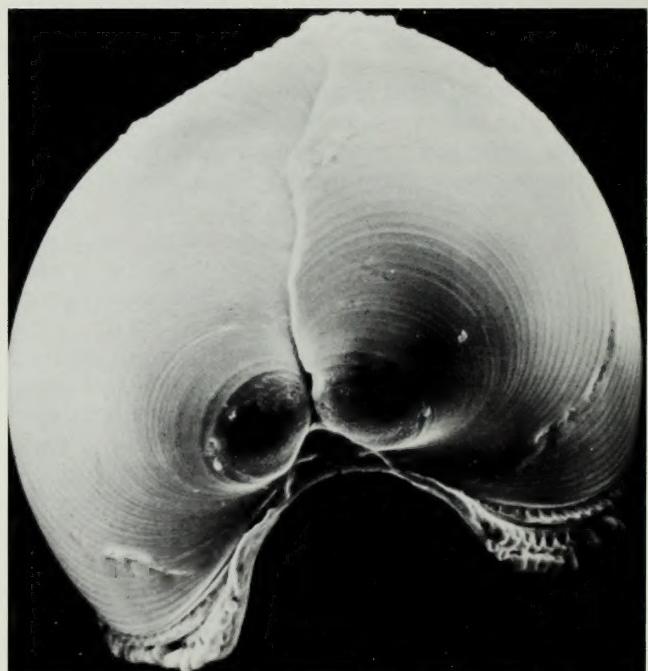
Dr. Ruth D. Turner climbing into ALVIN to go down to the Tongue of the Ocean, a deep ridge in the Bahamas, January, 1974.

ROWERS! DON'T DROP THAT OAR!

To visit Dr. Ruth D. Turner's third floor MCZ lab office (if one is lucky enough to catch her when she's not at the bottom of the ocean!) is to be carried off to the deep sea world where, among the many strange phenomena that occur there, minute molluscs bore into and feed on the wood which becomes their home. The world's most extensive collection of these wood-boring bivalves, mostly collected by Dr. Turner herself, inhabit the crowded drawers, samples of infested wood recovered after different intervals of deep-sea immersion hang on the walls along with photos of ALVIN (Wood's Hole's deep submergence research vessel) and relief maps of the ocean floor. The lab bench is scattered with specimens, microscopes, chemicals, correspondence from all over the world, and other evidences of the busy life of the occupant. With all her constant activity, Dr. Turner is always ready to stop and explain her work, amplified by slides, to the curious visitor. The story that emerges has kept the Navy interested enough to support her research for the last twelve years because these "shipworms", as they are commonly (and inaccurately) called, are among the major biological pests of the world, primarily as destroyers of docks, piers, and ships themselves.

Dr. Turner's well-known work is based on the con-

vention that practical problems cannot be solved in a state of biological ignorance; her two book-length



A deep sea wood-boring bivalve, newly metamorphosed, taken on the scanning electronmicroscope at 300x.

monographs on the Teredinidae and Pholadidae are the definitive works of these groups. She has become the acknowledged world's expert in this area and has served as advisor to the governments of the United States, Australia, and India, on problems of ship-worm destruction.

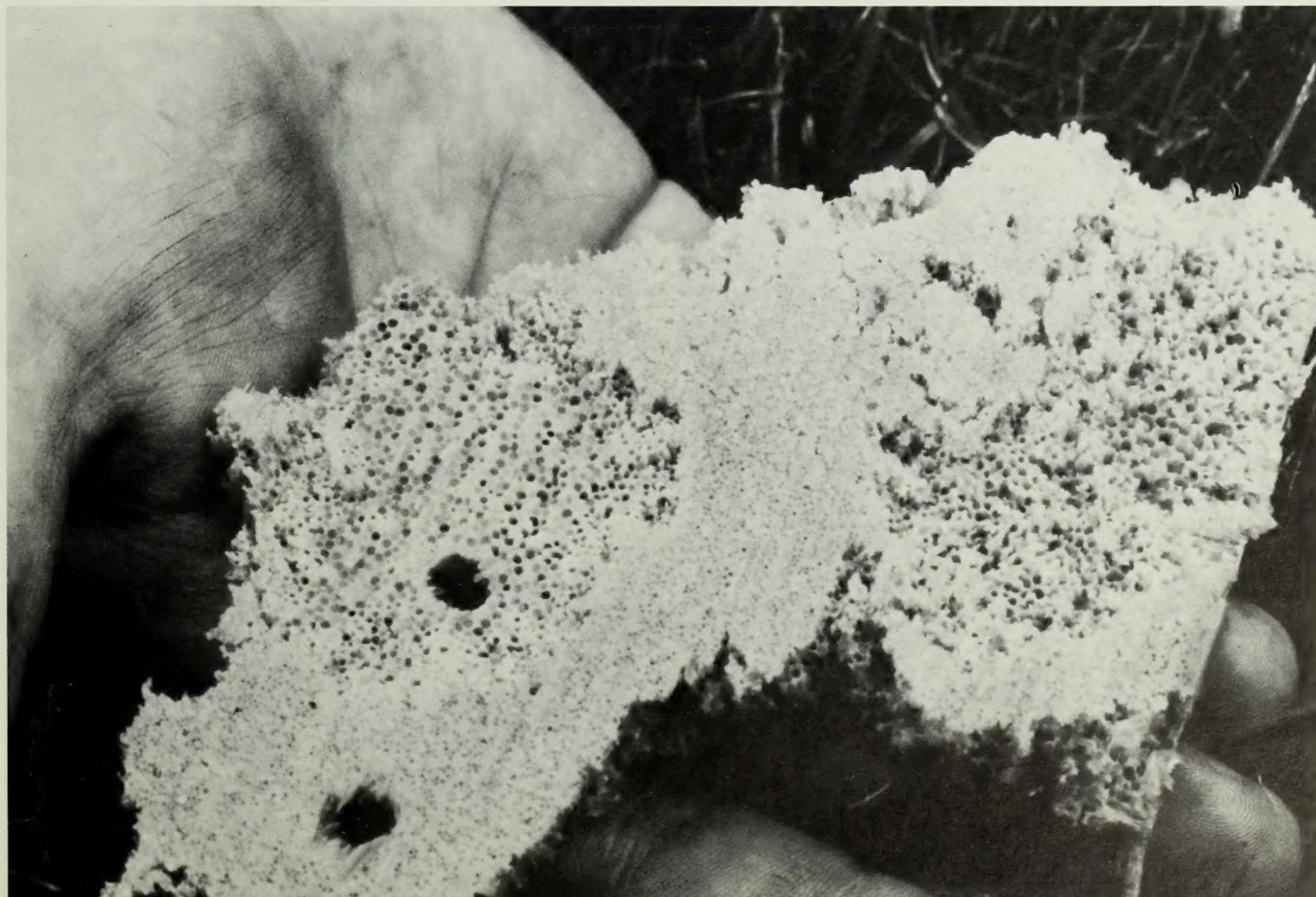
Recently Dr. Turner has discovered, through observing the ravages on sample panels of wood pushed into the bottom sediment 1830 meters down for three months that these wood-borers are the first known case of "opportunistic" species of the deep sea. The deep sea, with its constant environments, is generally thought to be the ideal site for a large variety of animals which adapt to the predictable, stable environment. However, while the arrival of wood "islands" on the ocean bottom, washed in in great quantities during the tropical rainy season and high latitude Spring run-off, is predictable, the exact point of arrival is not and it is this factor that has led shipworms to become "opportunistic", a characteristic more common of forms living in the fluctuating environments of shallow water.

It is at the larval stage that the wood-borers enter the wood. Once they settle and metamorphose into the adult form, they are incapable of moving to another piece of wood. The wood provides for all their needs — home and food. If the wood disintegrates, they die. It is postulated, on the basis of observed results, that either the larvae have the ability to delay metamorphosis, to detect wood at a considerable distance, and actively swim towards it or the larvae are

produced in great abundance, are carried by bottom currents, have the ability to delay metamorphosis, and settle when chance encounter brings them in contact with wood. Either way, these opportunistic strategies for survival have enabled them to destroy wood with remarkable efficiency.

She has also postulated that wood is an important source of enrichment in the deep sea. Apparently the borers convert woody plant material into an available food source for other animals. She has just returned from another ALVIN dive to 2042 meters in the Tongue of the Ocean, Bahama Islands where she examined and picked up wood put down a year ago. What she saw adds support to her hypothesis. Around the panels there were more crustacea than she had seen elsewhere on the bottom and there was a concentration of Galatheid crabs on the boards. Most of them fell off when the panels were pulled out of the mud but some had entered the mesh bags covering the panels and had grown so large they couldn't get out. They were obviously getting enough food from the animals in the severely bored wood to grow to fully adult size. She also found that the fecal pellets in the burrows of dead *Xylophaga* were full of worms which were undoubtedly feeding on this material. Whether the crabs were feeding on the worms or on the wood borers will have to await examination of the gut contents of the crabs brought up with the wood. However, it looks as though wood is the basis of a food chain with the borers being the primary converters.

A board after 104 days immersion showing the effects of borer infestation.



MINA BRAND RETIREES

Mina Brand's long years of intelligently dedicated library service to all the MCZ staff and students was gratefully acknowledged at a reception in her honor on February 7. The Romer Library was an appropriate setting for the festivities since Mina will continue serving as librarian, on a part-time basis, for this newly-renovated library.

Mina has spent her whole life with books. Before coming to the MCZ in 1967, she and her late husband worked at Schoenhof's Foreign Books for 25 years and before emigrating to the United States in 1940, they were bibliographers of rare books in Vienna.

As is usually the case, the entire MCZ community's high regard for Mina is fully reciprocated. She says she has greatly enjoyed working here and that helping staff and students gives her great satisfaction. "I have found the staff and the books to be most congenial!"



Professor Stephen J. Gould (assisted by his son Jesse) expresses everyone's gratitude to Mina Brand (right) while Librarian Ruth E. Hill, Library Assistant Kathleen A. Guilday, and Cataloguer Anne Kern look on.

TWO VISITING ALEXANDER AGASSIZ LECTURERS

The MCZ's corridors have their welcome Spring leavening of foreign accents again this year thanks to the foresight of Alexander Agassiz who provided for Visiting Lectureships to insure a lively interchange with other institutions. Professor Anthony Hallam from Oxford University and Professor Luitfried V. Salvini-Plawen from the University of Vienna are bringing new perspectives to the MCZ's formal and informal gatherings.

Professor Anthony Hallam

Professor Hallam's work has focussed on the interpretation of the environment of the Jurassic period (200-130 million years ago). "The climate was far more equable" he points out. Much of the world was like the Bahamas is today. Those huge reptiles couldn't have survived today's temperature extremes. Their fossil remains are found even at the poles."

Professor Hallam gave three lectures on "Investigation into the ecology and evolution of Jurassic marine invertebrate faunas" which included a talk on "The Evolution of Gryphaea". How this Jurassic oyster evolved, now the accepted view, was one of Professor Hallam's early contributions. His continuing interest on the history of continental drift (the subject of an article he authored in February's *Scientific American*) and his work on the geographic distribution of fossils in relation to migrating continents are well known and widely respected.

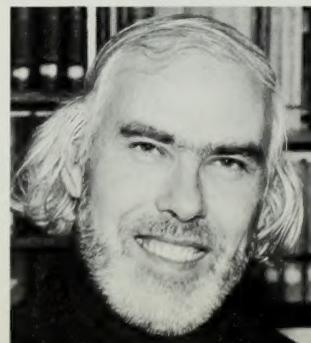
Professor Luitfried Salvini-Plawen

Professor Salvini-Plawen acknowledges that studying marine invertebrates in coast-less Austria might appear to present difficulties. However, he is fortunately able to combine his research in the Adriatic and Tyrrhenic Seas with vacations — the ideal of every field biologist!

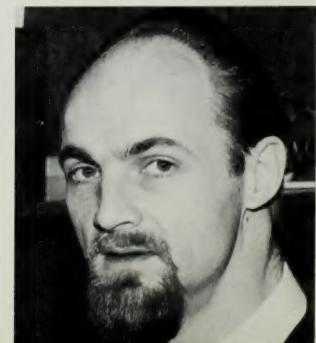
Professor Salvini-Plawen is studying the phylogeny and morphology of invertebrates and is particularly concerned with a very primitive group of shell-less molluscs and their relationship to other invertebrate groups. During his MCZ stay he is working with Professor Ernst Mayr whom he met at a symposium in Monaco.

He gave two lectures, one on primary shell-less molluscs and the other on the evolution of eyes in molluscs, as well as lectures to Professor Woollacott's Bio. 123 "Comparative Analysis of Invertebrate Development", a lecture at the Marine Science Institute of Northeastern University at Nahant, and a talk at Wood's Hole.

Anthony Hallam



Luitfried Salvini-Plawen



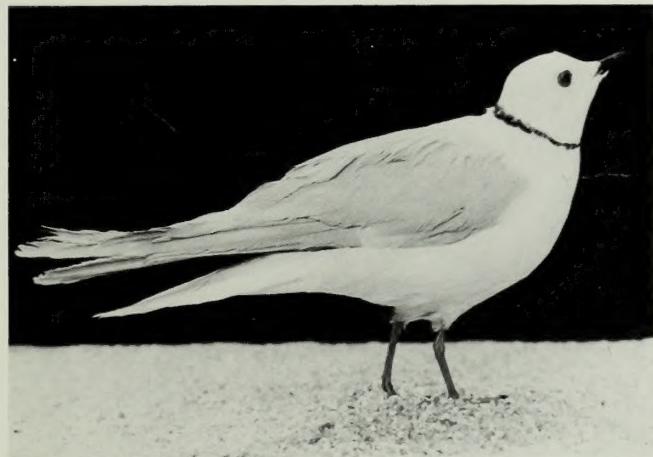
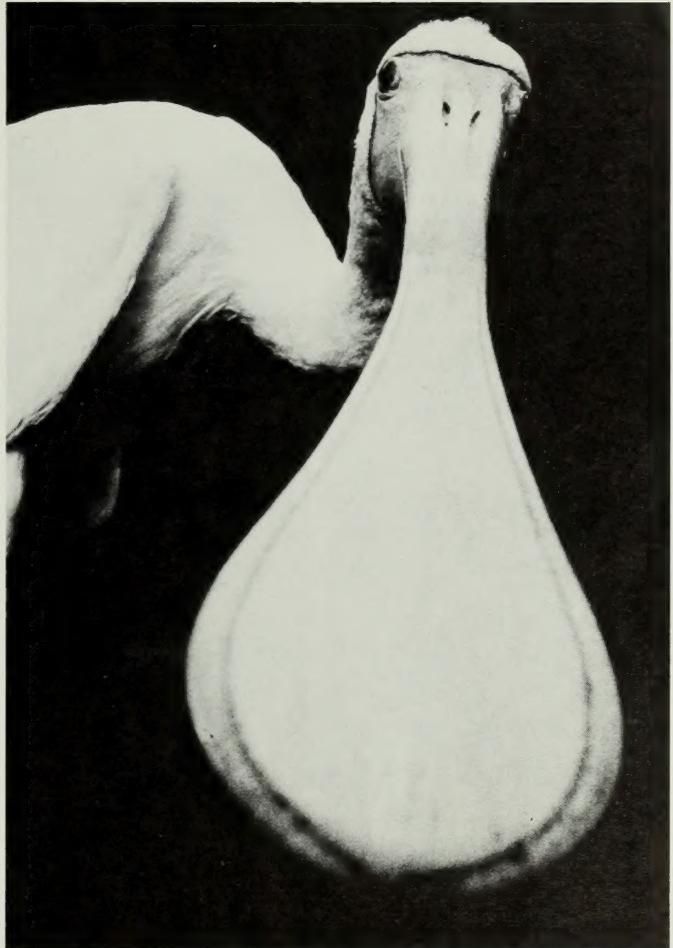
BIRD WATCHING IS EASY AT THE MCZ



a



b



c

d Photos by George S. Sheng

These four birds, which are among the exhibits on the third floor, are:

- a) Bald eagle (*Haliaeetus leucocephalus*), United States, Canada
- b) Scarlet ibis (*Eudocimus ruber*), Northeastern South America
- c) Ross' gull (*Rhodostethia rosea*), Northeast Siberia and Plum Island
- d) Australian spoonbill (*Platibis flavipes*), Australia

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FROM THE FIELD STATION

By William K. Newbury

Where do my dues go? We all ask that question about every organization we join. What about the MCZ? With a million dollar budget what difference does my \$25 make?

Last Fall the Friends of the MCZ allocated \$1000 to help support activities at the Field Station. We decided to use portions of this total in each of three areas. Immediately we were able to publish three of the Field Station's Guides to Resources: List of Mammals of Eastern Massachusetts, Introductory Notes, and Solitary Wasps of the Concord Field Station Area. These reports which sat completed but unpublished for several months are now eagerly used by students and amateur naturalists working in the Woods.

A major frustration has been our inability to provide accurate meteorological data on the conditions

right at the Field Station. The Friends' funds enabled us to purchase a seven-day temperature recorder and a rain gauge. With these instruments in hand we were able to cajole the Audubon Society into loaning us one of their instrument shelters. Thus, future research will have the added benefit of precise microclimatic observations.

With the remainder of the funds we have been able to construct a 100 meter grid system throughout the Estabrook Woods. This system will help researchers identify and establish uniform study areas and insure that they will be able to return to those exact plots. With the help of two local residents we were able to lay out the 300 stake grid during February. Though at times the working conditions were severe, we were compensated by the opportunity to watch a porcupine debark a towering white pine or see a goshawk sweep in front of the transit while trying to line up the next mark.

Though the \$1000 seemed to disappear quickly, this investment will have an important multiplier effect for teaching and research. In coming years students and faculty working at the Field Station will have more complete background information, better weather data and more accurate study plots than their predecessors had. Your continued support will make it even better in the future.

FRIEND-LY NEWS

Nature Preserved Course Well Received

A group of thirteen curious people learned a considerable amount about how the MCZ's departments collect, prepare, preserve, catalog, and store specimens on seven Saturday mornings this Spring. Members of the Departments of Birds, Vertebrate Paleontology, Mollusks, Fish, Reptiles and Amphibians, Insects, Mammals, and Invertebrates participated in this new course which is part of the Friends Public Programs — designed to make parts of the MCZ more accessible to interested amateurs.

Trip Committee Formed and Functioning

The first meeting of the Friends Trip Committee on April 3 resulted in the formation of several sub-groups which will research various future Friends trips. Inspired by Professor Edward O. Wilson and the allure of inexpensive accessibility to a host of natural history, the Florida Keys contingent got off to a vigorous start. Other current considerations are the Galapagos, East Africa, Colombia and fossil hunting in the western United States. The next trip will be announced as soon as the results are in.

The Friends 1976 Baja boat is filling up and the trip promises to defy the platitude that it is impossible to repeat such a good thing.

Turid Holldobler and her exhibit of ants and other drawings and paintings transformed the Agassiz Room following Bert Holldobler's lecture, "The Language of Ants" to the Friends of the MCZ on April 3. The exhibit remained open to the public for another week.



